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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,090	03/31/2004	Le Huang		7338

7590 06/15/2005

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EXAMINER	
DAVIS, BRIAN J	

ART UNIT	PAPER NUMBER
1621	

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/815,090	HUANG, LE	
	Examiner	Art Unit	
	Brian J. Davis	1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-19 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-19 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 31 March 2004 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 3/31/04.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement filed 3/31/04 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. The two CN references have therefore not been considered and each listing has been lined through.

Specification

The disclosure is objected to because of the following informalities: on page 1 of the specification, the diagram of formula I is missing. The specification instead contains the instruction "Formula I inert [sic] here." Appropriate correction is required.

Drawings

The drawings are objected to because although there should apparently be only one drawing, there are two of record in the application. (Figure 1 appears to be legitimately a drawing and is described as such in the specification. Figure 2 appears to be the missing diagram from page 1 of the specification.) Corrected drawing sheets, and or clarification, in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version

of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear what exactly the "novel amorphous form" of memantine hydrochloride might be. That is, are there two sets of compounds: a novel amorphous set and a non-novel amorphous set, the latter being excluded from the claim? When the scope of the claims can't be determined when considered in light of

the specification, a rejection under 35 USC 112, second paragraph, is proper. *In re Wiggins*, 488 F.2d 538, 179 USPQ 421 (CCPA1973).

Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear how a featureless X-ray powder diffraction pattern (Figure 1) characterizes a compound. The examiner would agree that a featureless X-ray powder diffraction pattern is evidence that a particular compound or set of crystalline compounds is *not* present. However, a featureless pattern would result from any non-crystalline sample of any compound. Additionally, references to the specification (in this case, Figure 1) by a claim is permissible only in rare instances.

The remaining claims are also rejected under 35 USC 112, second paragraph, as claims which depend from indefinite claims are also indefinite. *Ex parte Cordova*, 10 USPQ 2d 1949, 1952 (PTO Bd. App. 1989).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Polymorphism in Molecular Crystals* by Joel Berstein, Oxford University Press Inc., New York (2002) pages 253-254 and further in view of US 5,614,560, cited by applicant in the IDS.

Applicant claims an amorphous form of memantine hydrochloride, a process for its production, a pharmaceutical composition containing such an amorphous form and a method of use.

Polymorphism in Molecular Crystals is a recently published standard reference work. On page 253, section 7.7, the importance of amorphous active ingredients in the pharmaceutical industry is discussed. It is explicitly stated that the solubility properties exhibited by amorphous forms of active ingredients are often of particular advantage in the pharmaceutical arts. On page 254, it is explicitly stated that such amorphous forms are typically prepared by employing crystallization procedures far from equilibrium such as, for instance: rapid solidification from the melt, lyophillization, spray drying, solvent removal, precipitation by pH change, or by various mechanical processes.

US 5,614,560 teaches a method for reducing non-ischemic NMDA receptor-mediated neuronal damage in a mammal using memantine or a pharmaceutically acceptable salt (abstract; Figure 2; claim 6).

Applicant distinguishes over the prior art in that the amorphous form, process of making, composition and method of use of a particular pharmaceutical compound, memantine chloride, is claimed. However, such an amorphous form, process of making, composition and method of use would have been obvious to one of ordinary skill in the art at the time of the invention.

Memantine and its pharmaceutically acceptable salts are already well known as compounds with pharmaceutical interest, as evidenced by US 5,614,560. That being the case, one of ordinary skill in the art would have immediately recognized that the polymorphic forms of such compounds – including the amorphous form – would be of pharmaceutical interest. The importance of polymorphic forms of many classes of compounds is, in fact, why just such a treatise as *Polymorphism in Molecular Crystals* has been recently published and why Chapter 7, in particular, is directed to polymorphism in pharmaceuticals and why section 7.7 of that chapter is specifically directed to the amorphous forms of compounds of pharmaceutical interest.

Applicant's claim to an amorphous form of memantine hydrochloride is obvious in light of the state of the art as outlined above. Likewise, applicant's process to produce such a compound is merely a set of engineering expediencies following already known procedures for producing amorphous forms of compounds of pharmaceutical interest. And finally, applicant's composition and method of use of such an amorphous form of memantine hydrochloride is also obvious given the composition and method of use of the crystalline forms (again, as evidenced by US 5,614,560).

Case law also supports the above view: A novel useful compound that is isomeric with the prior art compound is unpatentable unless it possesses some unobvious or unexpected beneficial property not possessed by the prior art compound. *In re Norris*, 179 F.2d 970, 84 USPQ 458 (CCPA1970). See also: *In re Weijland*, 587 OG 3, 33 CCPA 837, 154 F.2d 133; 1946 CD 175, 69 USPQ 86; *Ex parte Hald*, Paper 15 in US 2,647,145. To be patentable, a novel form of an old compound must possess a new utility or a utility of a different type; a mere improvement in properties does not render a novel form of an old compound patentable.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian J. Davis whose telephone number is 571-272-0638. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BRIAN DAVIS
PRIMARY EXAMINER

Brian J. Davis
June 13, 2005